

## **Cereal Leaf Beetle** *Oulema melanopus*

Cereal leaf beetle (CLB), pictured below, is a quarantine pest of forages and cereal grains. It is commonly found on small grains, particularly oats, barley, and spring wheat. The adults and immatures feed on the developing plants, at times causing extreme defoliation.



Adult cereal leaf beetle.  
Approximate length 1/8 to 1/4 inch long.

During 2006, as in the past, routine surveys were conducted for CLB. Up to 5 samples were taken in each of the 36 surveyed counties, with a sample consisting of two sets of 50 sweeps with a 15-inch sweep net. When choosing fields to sample, preference was given to spring planted grains.

Cereal leaf beetles were found in 16 Montana counties during the 2006 sampling season. Counties that had been found positive for CLB in the past were not necessarily sampled during 2006. In total, 45 of Montana's 56 counties have had CLB detections since the discovery of the pest in the 1980's.

There were no noted range expansions for this pest during 2006.



Larval Cereal Leaf Beetles and Light Feeding Damage.

**Counties Sampled for Cereal Leaf Beetle During 2006.**

<b>County</b>	<b>No. Pos. Samples/No. Samples</b>	<b>County</b>	<b>No. Pos. Samples/No. Samples</b>
Big Horn	6/6	Madison	0/4
Blaine	0/14	McCone	0/4
Broadwater	2/15	Mineral	2/4
Carbon	7/10	Missoula	1/1
Cascade	3/12	Petroleum	0/1
Choteau	0/18	Phillips	0/8
Daniels	0/5	Pondera	0/20
Fallon	0/3	Richland	0/1
Fergus	1/10	Roosevelt	0/6
Flathead	6/11	Rosebud	0/10
Gallatin	1/11	Sheridan	0/5
Glacier	0/20	Teton	4/9
Hill	0/24	Toole	0/24
Judith Basin	0/1	Treasure	2/4
Jefferson	0/10	Valley	0/7
Lake	3/5	Wheatland	0/10
Lewis & Clark	4/18	Wibaux	1/3
Liberty	0/27	Yellowstone	1/12
		<b>TOTAL</b>	44/353



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## **Cereal Leaf Beetle Parasitoids**

### ***Tetrastichus julis* & *Anaphes flavipes***

The Cereal leaf beetle has spread across much of Montana during the past two decades. While initial movement was accompanied by severe outbreaks and economic damage, in more recent years the outbreaks have not been as severe. This may be, in part, due to the nature of the newly infested areas, which are generally drier and therefore less hospitable for the beetle immatures. It may also be due to the presence of two parasitoids released by the United States Department of Agriculture, Animal & Plant Health Inspection Service, Plant Protection & Quarantine (USDA APHIS PPQ) to assist in the management of this pest.

The first of these parasitoids to be released and recovered was *Tetrastichus julis*, an internal parasitoid of the CLB larva. The larvae of *T. julis* are maggot-like and bright orange in color. In some samples over 80 percent of the specimens of CLB have contained parasitoids, although this varies not only from place to place but also from day to day in the same place. Data suggest that this parasitoid is capable of movement as rapidly as CLB.

The second parasitoid, *Anaphes flavipes*, is an egg parasitoid. Although the insect has been released at several Montana locations, the exact status has been more difficult to assess. This is due partially to the small size of the insect, and partially because CLB eggs are prone to desiccation, making it more difficult to determine when mortality was due to the parasitoid.

During the survey, egg and larval samples were taken to gather information on the distribution of these two insects. Egg samples consisted of at least 25 eggs, and larval samples consisted of any larvae found in a sample. Up to 5 samples were taken in each of the 14 surveyed counties, with a sample consisting of two sets of 50 sweeps with a 15-inch sweep net. When choosing fields to sample, preference was given to spring planted grains.

#### **Counties Sampled for Cereal Leaf Beetle Parasitoids During 2006.**

<b>County</b>	<b><i>T. julis</i></b>	<b><i>A. flavipes</i></b>	<b>County</b>	<b><i>T. julis</i></b>	<b><i>A. flavipes</i></b>
Big Horn	Yes	N/A	Missoula	Yes	No
Blaine	Yes	N/A	Richland	No	N/A
Carbon	Yes	N/A	Sanders	No	No
Dawson	No	N/A	Stillwater	Yes	N/A
Hill	No	N/A	Sweet Grass	Yes	N/A
Gallatin	No	N/A	Teton	Yes	N/A
Lake	Yes	No	Yellowstone	Yes	N/A